

Translation

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 62055CT	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP2004/000114	International filing date (<i>day/month/year</i>) 09 January 2004 (09.01.2004)	Priority date (<i>day/month/year</i>) 10 January 2003 (10.01.2003)	
International Patent Classification (IPC) or national classification and IPC A62C 35/68			
Applicant KAWASAKI SAFETY SERVICE INDUSTRIES, LTD.			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>10</u> sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand 04 August 2004 (04.08.2004)	Date of completion of this report 09 December 2004 (09.12.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/000114

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1, 6-23 _____, as originally filed/furnished
- pages* _____ 2, 3, 3/1, 4, 5 _____ received by this Authority on _____ 10 November 2004 (10.11.2004)
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ 3-8 _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ 1, 2, 9, 11-15 _____ received by this Authority on _____ 10 November 2004 (10.11.2004)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1-15 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. _____ 10 _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP04/000114

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	8, 11, 12	YES
	Claims	1-7, 9, 13-15	NO
Inventive step (IS)	Claims		YES
	Claims	1-9, 11-15	NO
Industrial applicability (IA)	Claims	1-9, 11-15	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

List of documents

Document 1: JP, 10-339383, A (Kawasaki Safety Service Industries, Ltd.), 22 December, 1998 (22.12.98), full text, Figs. 1-10

Document 2: JP, 55-20103, B2 (K.K. Neriki), 30 May, 1980 (30.05.80), full text, Figs. 1-6

Document 3: JP, 3058841, B2 (Koatsu Co, Ltd.), 4 July, 2000 (04.07.00), full text, Figs. 1-4

Claim 1

Document 1 describes a rapid-opening, pressure-regulating valve having a main body (1) having a valve seat (13) intervening in a channel of fluid by which a fluid inlet (11a) communicates with a fluid outlet (12a), a valve-element member (2) consisting of the main body of the valve-element member (see the figures mentioned below) having one end and the other end, having a closing pressure face (24) communicating with the outlet, receiving pressure in the closing direction, and an opening pressure face (25) formed on the other end, receiving pressure in the opening direction, the said main body of the valve-element member being guided in a mobile manner in the opening/closing direction to the main body (1), and valve elements (22, 21) installed on one end in a detachable manner, opened/closed in a manner by separating from or coming into contact with the valve seat (13), a passage (14-16-23') whereby the inlet communicates with the other end, an energizing member (4) that energizes the valve-element member (2) in the opening direction, a receiving member (a spring seat 3) to block the space connected with the passage in the main body (1), and a mobile receiving part (9) installed to intervene between receiving members (spring seat 3 and the upper part of a middle body 10) and the energizing member (4), guided in a mobile manner in the opening/closing directions, and having a pressure face where the said mobile receiving part receives the same pressure as the opening pressure face (25), the said mobile receiving part (9) making the energizing means generate an energizing force when the said mobile receiving part comes to a predetermined position in the opening direction, a positioning part (see the figures below) provided in the main body (1) to stop the mobile receiving part (9) at the predetermined position, a pressure-confining means (5) having a confining plate installed to shut off the said passage, an anti-pressure-confinement means (a valve actuation mechanism 6) so formed and installed in the main body that the confining plate (52, see Fig. 9) can be broken when the said anti-pressure-confinement means is actuated, whereby the pressure in the passage is supplied to the opening pressure face, as seen in Figs. 7, 8, 10, etc., wherein the area (Fig. 10) of the valve element (22) where fluid pressure is applied when the valve element is seated on the valve seat (13), the pressure area of the closing pressure face (24), the pressure area of the opening pressure face (25), and the energizing force of the energizing member (4) are defined to have a relationship in which the valve element part becomes open when the passage becomes open and the opening pressure face receives pressure in the opening direction, and the valve element part is closed when the valve-closing force to close the valve element part becomes larger than the energizing force when the pressure at the outlet exceeds a predetermined pressure. as read on pages 3 and 4, paragraphs [0017]-[0026] in the gazette. Accordingly, the subject matter of claim 1 of the present application does not appear to be novel.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

Claim 2

It is recognized that the rapid-opening, pressure-regulating valve of document 1 has an anti-pressure-confinement means (6) so formed and installed in the main body (1) that the said means can keep the pressure-confining member (52) open when the said means is actuated, whereby the pressure in the passage is supplied to the opening pressure face.

Claim 3

Document 1 describes a rapid-opening, pressure-regulating valve wherein a pressure-confining member (52) is a confining plate, and an anti-pressure-confinement means (6) has a needle part (65) provided opposite the confining plate, a piston-like member (64) to receive fluid pressure whereby the said member energizes the needle part so that the said needle part can penetrate the confining plate, and a control part (68) so formed that the said piston-like member can be energized.

Claim 4

Document 1 describes a rapid-opening, pressure-regulating valve in which the valve member (21, 22) consists of a contact part (22) to come into contact with a valve seat and a reinforcement part (a cap 21) to restrain the deformation of the contact part.

It is recognized that setting the tensile strength of the reinforcement part at 200 N/mm² or more is a matter of design variation that a person skilled in the art could have set as a value range as required. Accordingly, the subject matter of claim 4 does not appear to involve an inventive step.

Claims 5 and 6

Document 1 describes a structure wherein the area of the region of a valve element opposite a valve seat (13) is the same as the area of an opening pressure face (25) (paragraph [0020]), and a constitutional feature wherein both the area of the valve element where fluid pressure is applied when it is seated in the valve seat (13), and the area of the opening pressure face (25) where pressure is applied, are constant, and, with such relationship kept, the area of a closing pressure face (24) where pressure is applied is reduced (see gazette, pages 3 and 4, paragraphs [0017]-[0026]).

Claim 7

Document 1 describes a rapid-opening, pressure-regulating valve so constituted that a receiving member (a spring seat 3 and the upper part of a middle body) can allow a mobile receiving member (9) to be guided in its movement in the opening/closing directions by the inner circumferential faces, in Fig. 7.

Claim 8

Document 1 describes a rapid-opening, pressure-regulating valve wherein a receiving member (3, 10) is coupled with a main body (1) by a screw part (the outer circumference of the middle body 10) and a contact part tapered off in steps (see the figures) in Fig. 7.

Document 2 describes a manual valve for a cylinder wherein a receiving member (a holding screw 26) engages and connects with a main body (a manual valve 2) in a tapered contact part (see Figs. 2 and 5, etc.).

Accordingly, the subject matter of claim 8 does not appear to involve an inventive step.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

Claim 9

Document 1 describes a rapid-opening, valve having an insertion-part reinforcement means (an reinforcement ring 11 c) to reinforce the insertion part (a nozzle part 11) of a cylinder, in Fig. 1.

A constitutional feature of the said insertion part (11) of a cylinder where a containing part and an exposed part, not shown in the figure, are provided would be obvious.

Document 3 describes a valve device for a gas storage container having a screwing stop part (a flange on the bottom) in an insertion-part reinforcement means (20a), and it is recognized that the said screwing stop part (the flange on the bottom) makes an insertion part (11) of a cylinder substantially into a compressed state, whereby the part including the boundary part between a containing part and an exposed part, (not shown in the figure), is reinforced.

An expert in the relevant field could have obviously made the subject matter of claim 9 of the present application by applying the screwing stop part described in document 3 to the rapid-opening, valve of document 1.

Claims 11 and 12

Document 3 describes a valve device for a gas storage container wherein a screwing stop part (a flange in the bottom) is provided in an insertion-part reinforcement means (20a). Accordingly, the subject matters of claims 11 and 12 do not appear to involve an inventive step.

Claims 13-15

Document 1 (see Fig. 5) describes a fire-extinguishing device consisting of an inactive gas cylinder (100) to store an inactive gas for fire extinguishing, a rapidly opening, pressure regulating valve (101) wherein an inlet (11a) of a main body (1) is attached to the inactive cylinder, and lines (105-109) to guide inactive gas from an outlet of the rapidly opening, pressure regulating valve to a fire-extinguishing section, and a rapid-supply device. Accordingly, the subject matters of claims 13-15 do not appear to involve an inventive step.